

CLAIMS:

1. A spiral inductor formed with n levels ($n \geq 2$) of electroconductive film layers disposed on a semiconductor substrate with insulators inserted therebetween, comprising:

a spiral interconnect formed by disposing spirally the i-layer ($2 \leq i \leq n$) electroconductive film layers electrically connected and vertically adjacent to each other; and

an underpass interconnect that is formed with the k-layer ($1 \leq k \leq n-1$) electroconductive film layers electrically connected and vertically adjacent to each other, and that is electrically connected with the internal end of the spiral interconnect,

wherein in the portion where the spiral interconnect and the underpass interconnect intersect each other, the j ($1 \leq j < i$) layers vertically adjacent to each other are used as the electroconductive film layers forming the underpass interconnect of the electroconductive film layers forming the spiral interconnect, and

the narrowest part in the portion of the spiral interconnect intersecting with the underpass interconnect is wider than the narrowest part in the portion of the spiral interconnect not intersecting with the underpass interconnect.

2. A spiral inductor according to Claim 1, comprising a second underpass interconnect formed with h levels ($1 \leq h \leq n-1$) of electroconductive film layers electrically connected and vertically adjacent to each other, and that is electrically connected with the portion of the spiral interconnect other than both ends of the spiral interconnect;

wherein in the portion where the spiral interconnect and

the second underpass interconnect intersect with each other, the m-layers ($1 \leq m < i$) vertically adjacent to each other are used as the electroconductive film layers forming the underpass interconnect of the electroconductive film layers forming the spiral interconnect, and

the narrowest part in the portion of the spiral interconnect intersecting with the second underpass interconnect is wider than the narrowest part in the portion of the spiral interconnect not intersecting with the underpass interconnect.

3. A transformer that is a combination of the two spiral inductors each of which is described in Claim 1 or Claim 2.